

**Notice of Allowability**

Application No.

10/754,251

Examiner

Stephen A. Holzen

Applicant(s)

MCDONNELL, WILLIAM R.

Art Unit

3644

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to interview on 5/10/2006.
2. ☒ The allowed claim(s) is/are 1,4-9,12,13,18,19,22,34,35,37-39,42,45,46,51-67,69 and 70.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other <u>interview summary 5/10-23</u> .                   |

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with J. Philip Polster on 5/10/2006.

The Claims have been amended to read as follows:

**Claim 1** An aerial recovery system for recovering an aircraft, said system comprising;

the aircraft and

an arrestment line held up at an upper end by support structure supported by a base, a lower end of the arrestment line also being connected to the base, said arrestment line not being a support for said support structure in the form of a rigid, straight-line guy line tension-tie connection between an immovable upper end attached to the support structure and an immovable lower end,

said aircraft containing a capturing device for capturing said line, said capturing device comprising a hook positioned laterally of a longitudinal axis of said aircraft, said hook being adapted to releasably secure said line to said aircraft, said hook being the primary means of capturing said aircraft,

said aircraft containing structure suitable for deflecting said line laterally into engagement with said hook, said structure comprising a wing of said aircraft.

**Claim 9.** The aerial recovery system of claim 1 in which said lateral deflecting structure is swept at least fifteen degrees.

**Claim 18.** In combination, a flying object and an apparatus adapted for capturing the flying object,

the flying object having a spanwise lifting surface with a capture device positioned laterally of the centerline of the flying object, the capture device comprising a hook adapted to releasably secure the flying object to the apparatus, the hook being the primary means of capturing said flying object, the flying object being adapted for flying along a flight path,

the apparatus comprising:

an arrestment line positionable in the flight path of the flying object, at least a portion of the arrestment line being inclined at an angle relative to the spanwise lifting surface to intersect the leading edge of the spanwise lifting surface, the arrestment line being positioned to engage the capture device of the flying object to releasably secure the flying object to the apparatus; and

a support structure coupled to the arrestment line at two spaced-apart positions and positioned to support a portion of the arrestment line between said positions in the flight path,

said arrestment line not being a support for said support structure in the form of a rigid, straight-line guy line tension-tie connection between an immovable upper end attached to the support structure and an immovable lower end.

**Claim 34.** In combination, a flying object and an apparatus adapted for capturing the flying object, the combination comprising:

a) a line suspended across the flight path of the object in an orientation which includes a component normal to the flight path;

b) support structure, with a load path to a base, suspending the line, a lower end of the line being restrained to prevent the line from blowing freely in the wind, the arrestment line not being a support for the support structure in the form of a rigid, straight-line guy line tension-tie connection between an immovable upper end attached to the support structure and an immovable lower end; and

c) a device located off the centerline of the flying object, the device being adapted for intercepting the line after the line slides laterally along a leading edge of a structure comprising a wing of the flying object and holding the flying object to the line, the device being the primary means of capturing the flying object,

the load path not including the arrestment line below the flying object.

**Claim 37.** The combination of claim 34, wherein the device adapted for intercepting the line comprises a hook on the wing of the flying object, the hook including a line retaining device.

**Claim 38.** The combination of claim 66, wherein the device adapted for intercepting the line comprises a hook on the wing of the flying object and includes an

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inner throat smaller than the diameter of the line so as to generate a sufficient amount of braking force such that after the line is intercepted by the hook, sliding of the line through the hook is substantially arrested.

**Claim 41 is canceled**

**Claim 42.** The aerial recovery system of claim 1, wherein the line is a cable.

**Claim 45.** The aerial recovery system of claim 54, wherein the hook includes an inner throat smaller than the diameter of the line so as to generate a sufficient amount of braking force such that after the line is intercepted by the hook, sliding of the line through the hook is substantially arrested.

**Claim 46.** The aerial recovery system of claim 1, wherein the motion of the aircraft during deceleration is accommodated by compliance of the line.

**Claim 54.** An aerial recovery system for capturing an aircraft, said system comprising;

the aircraft and

an arrestment line held up at at least one end by an aerial lifting apparatus that uses a relative wind to generate lift, said aerial lifting apparatus not being a rotary wing apparatus that generates lift by blowing air down through a rotor,

said aircraft containing a hook adapted for capturing said line and releasably securing said aircraft to said arrestment line, said hook being positioned laterally of a longitudinal axis of said aircraft, said hook being the primary means of capturing said aircraft,

said aircraft containing structure suitable for deflecting said line laterally into engagement with said hook, said structure comprising a wing of said aircraft, said structure being swept at least fifteen degrees from an inboard end of the wing to an outboard end of the wing.

**Claim 57.** The system of claim 54 wherein the aerial lifting apparatus also comprises a lighter-than-air balloon.

**Claim 64:** The combination of claim 18 wherein the hook is positioned forward of a line defined by a leading edge of a wing inboard of the hook.

**Claim 65.** The combination of claim 18 wherein the spanwise lifting surface is swept at least fifteen degrees.

**Claim 66.** The combination of claim 34 wherein the leading edge of the structure comprising a wing swept at least fifteen degrees.

**Claim 68 is canceled**

**Claim 69 is added:** The system of claim 54 wherein said aerial lifting apparatus is attached to a water craft.

**Claim 70 is added:** The system of claim 54 wherein said aerial lifting apparatus has a fabric aerodynamic lifting surface.

2. The following is an examiner's statement of reasons for allowance:

Re – claims 1, 18, 34: The prior art does not teach a hook being the primary means for capturing the aircraft in combination with the other elements. Teledyne does

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not teach the limitations of this claim since Figure 43 does not teach an arrestment line that is not a "support for said support structure....an immovable lower end".

Re – claim 54: The prior art does not teach an aerial lifting apparatus that holds up an arrestment line in combination with a hook being the primary means of capture. Teledyne publication does not teach the limitations in claim 54. Figures 73-75 are mutually exclusive species, the aerial lifting apparatus illustrated therein are not interchangeable and it would not be obvious to interchange them (see pages 192-200).

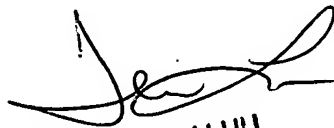
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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